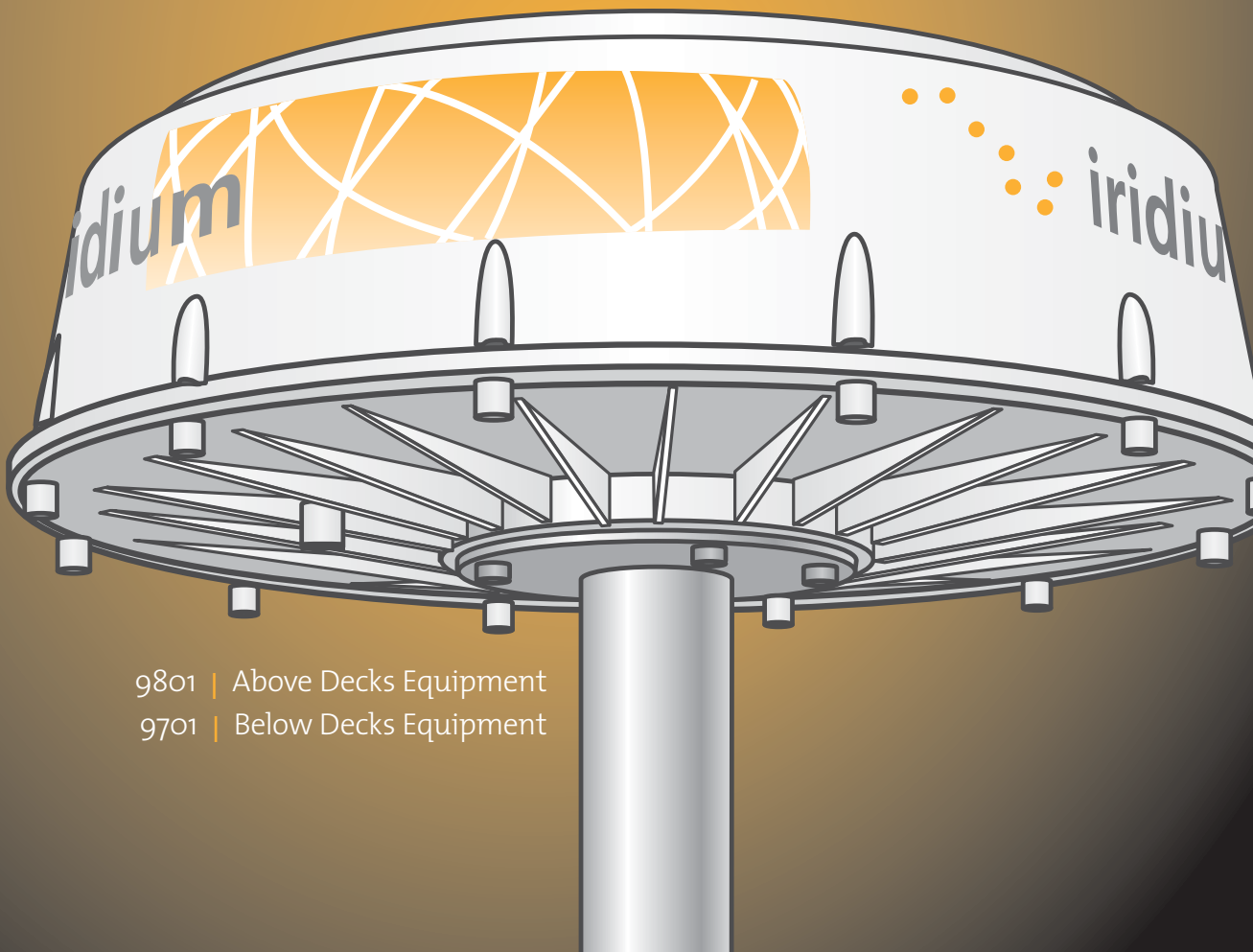
iridium

Iridium OpenPort Terminal
User Manual



9801 | Above Decks Equipment
9701 | Below Decks Equipment

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Notice:

Trademark Information

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1 | Introduction

Thank you for purchasing the state of the art Iridium OpenPort Terminal. Iridium is the only provider of truly global satellite voice and data communications solutions with complete coverage of the entire earth including oceans, airways and even polar regions. The Iridium OpenPort Terminal delivers reliable, secure, real-time, simultaneous high quality voice and up to 128kbit/s data connection to the Iridium satellite network from any point on the globe.

About This Manual

This manual provides you with complete information on the use of the OpenPort Terminal. This includes the following:

- Starting the system
- How to make and receive voice calls
- How to transfer data across the Internet
- System Administration
- Troubleshooting

Terms to Know

ADE: Above Decks Equipment, the radiating unit.
BDE: Below Decks Equipment, the user interface unit.
ISU: Iridium Subscriber Unit, The ADE and BDE together.
POTS: Plain Old Telephony System
SIM: Subscriber Identity Module
PSU: Power Supply Unit
Provisioned: A term used to indicate the SIM card is activated for voice and data connection. This can only be done by the Service Provider.

2 | Safety

Warnings

The ADE and the BDE should be installed by a qualified professional technician trained in the installation of marine electronics and antennas. Failure to comply with these precautions or with specific warnings on the equipment or in this manual violates the safety standards of the design, manufacture and intended use of this equipment. Iridium Satellite LLC assumes no liability for the customer's failure to comply with these requirements.

⚠WARNING!

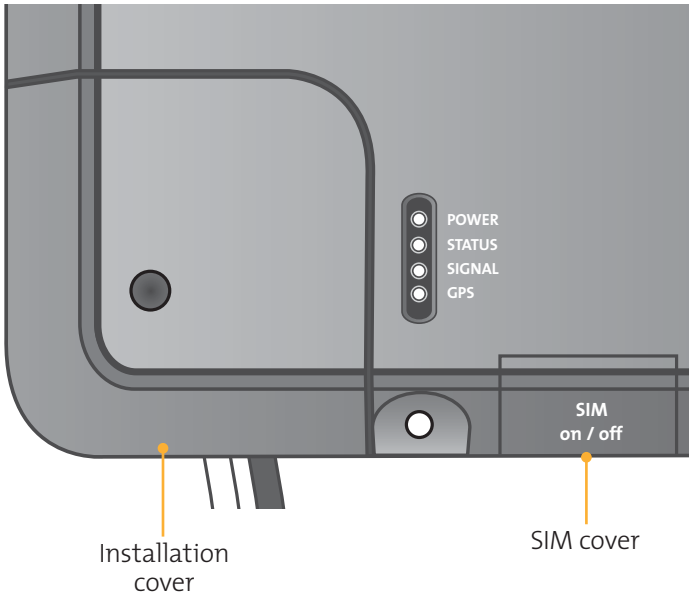
The Below Decks Equipment (BDE) contains extra low voltage that may cause serious injury if opened or not grounded. Ensure the unit is properly grounded before operation and do not, under any conditions, open or dismantle the BDE.

Note: Only a qualified professional technician trained in the installation of marine electronics and antennas should remove the installation cover on the BDE.

⚠ CAUTION!

The Above Decks Equipment (ADE) transmits radio frequency (RF) that is potentially harmful. When the system power is ON keep all personnel a minimum of 1.0 m (3.3 ft.) from the antenna (see Radiation Hazard).

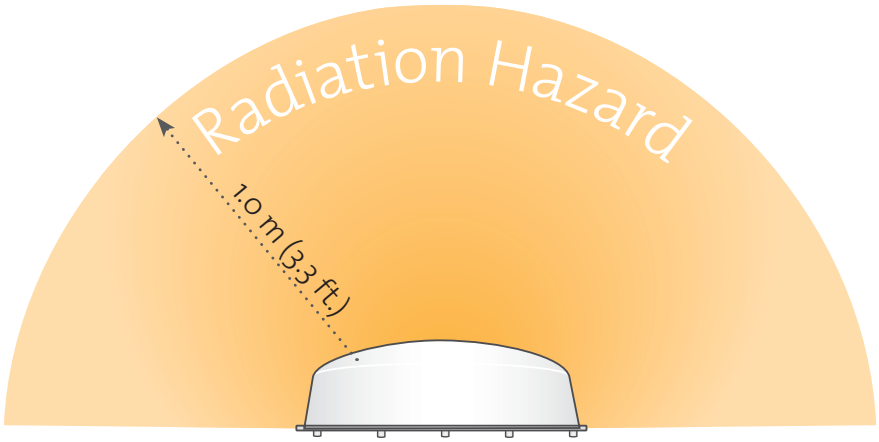
Figure 2 | 1



Radiation Hazard

Potentially hazardous radio frequency (RF) is transmitted from the ADE. To avoid risk to personnel it is recommended people keep the following distances between themselves and the antenna when the system power is ON.

Figure 2 | 2



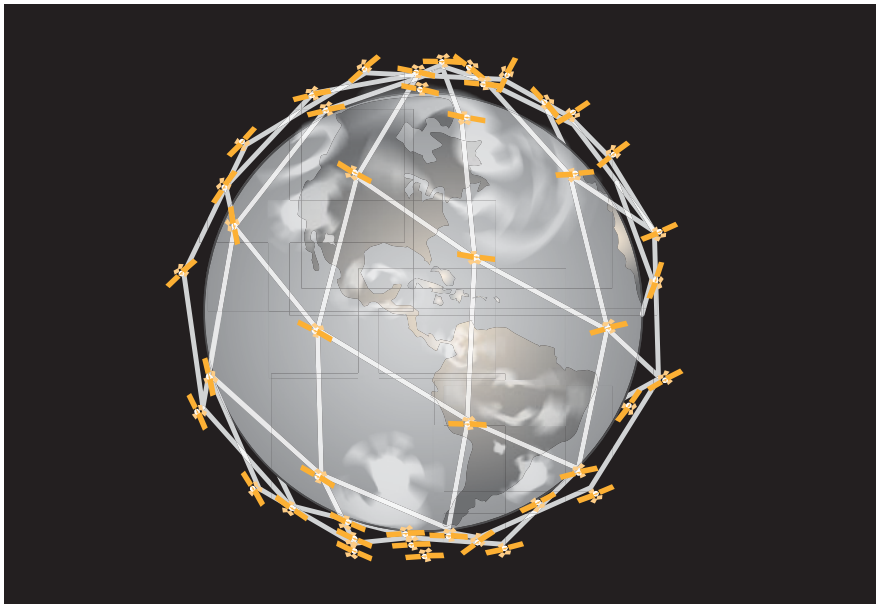
Description	Minimum Distance from Antenna
within 0° - 180° of the antenna elevation range	1.0 m (3.3 ft.)

3 | Overview

Iridium Satellite Communications

Iridium's constellation consists of 66 low-earth orbiting (LEO), cross-linked satellites operating as a fully meshed network and supported by multiple in-orbit spares. Iridium has gateways in Arizona and Hawaii and additional telemetry, tracking and control facilities in Alaska, Canada and Norway. It is the largest commercial satellite constellation in the world.

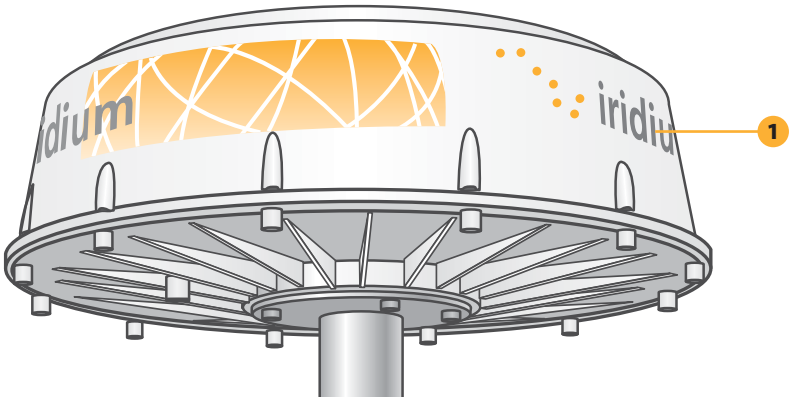
Figure 3 | 1



OpenPort Terminal Components

Above Decks Equipment

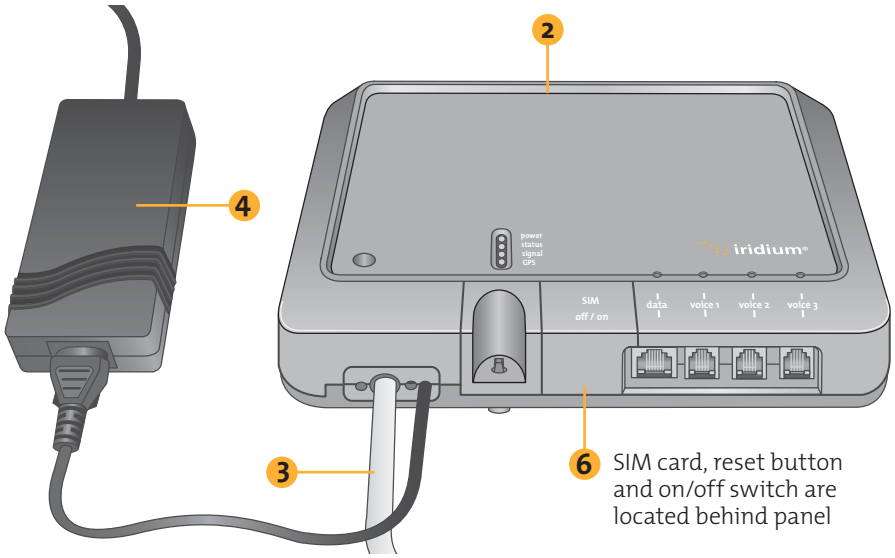
Figure 3 | 2



1. **Above Decks Equipment (ADE)**
   The Above Decks Equipment (ADE) provides the communication connection between the BDE and Iridium's satellites. The ADE will automatically locate and track Iridium satellites overhead.

Below Decks Equipment

Figure 3 | 3



2. **Below Decks Equipment:** The Below Decks Equipment (BDE) is the modem to which you connect your telephones and computers. It is capable of handling three POTS/RJ11 telephone handsets and one Ethernet data connection.

3. **ADE / BDE Cable:** The cable connects the ADE to the BDE. It is shielded and has a waterproof connection for the ADE.

4. **AC Power Supply Unit:** The AC Power Supply Unit (PSU) provides power to the BDE.

5. **POTS Handsets (not shown):** Three handsets are provided with your OpenPort Equipment: a Captain's Phone, for installation on the bridge, and two Crew Phones, designed for quick access to Iridium Crew Calling services.

6. **SIM:** The SIM card validates the system at start-up, allows connection to the Iridium network and provisions the appropriate phone and data lines.

4 | System Start-up

Now that the system has been set up by the installer and is ready for use when it is turned ON it is important to conduct the following checks before using the system:

1. Is the equipment properly grounded and is there power to the units?
2. Are all personnel the proper distance away from the RF hazard zone?
3. Are there any obstructions around the ADE?
4. Is a valid OpenPort SIM card installed in the SIM holder and locked into position?

Figure 4 | 1

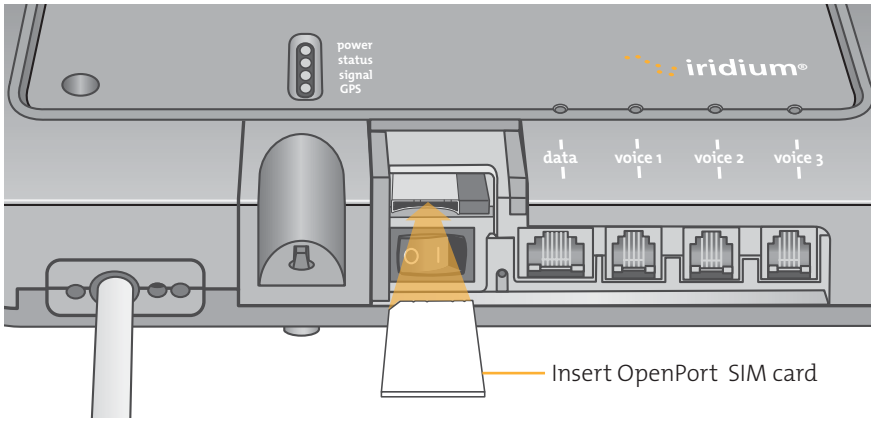
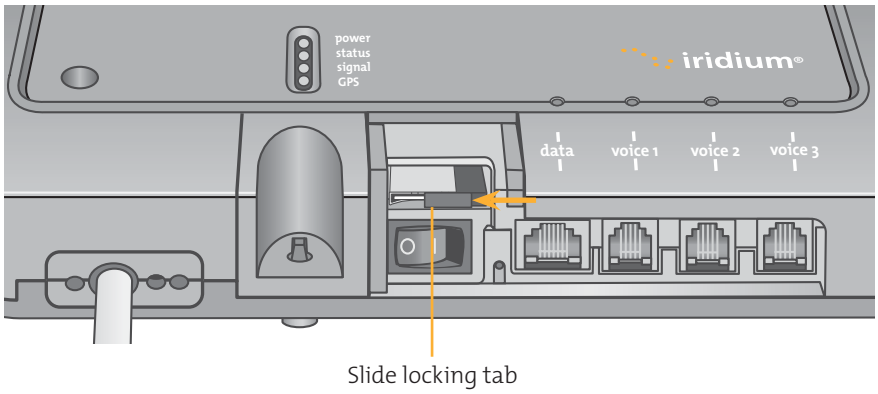


Figure 4 | 2



SIM Validation

In order to access the Iridium network the BDE must have a valid SIM installed. The number of voice lines available is set when your Service Provider provisions (enables) the SIM card. **For example:** There are three phone lines available but you choose to only provision one of them. Upon system activation only one phone line will be available.

Your service provider is the only party capable of provisoning voice and data lines. Contact your service provider to provision or remove phone and data lines. Once the service provider has provisioned the appropriate line(s) this information is downloaded to the OpenPort Terminal the next time you access the network.

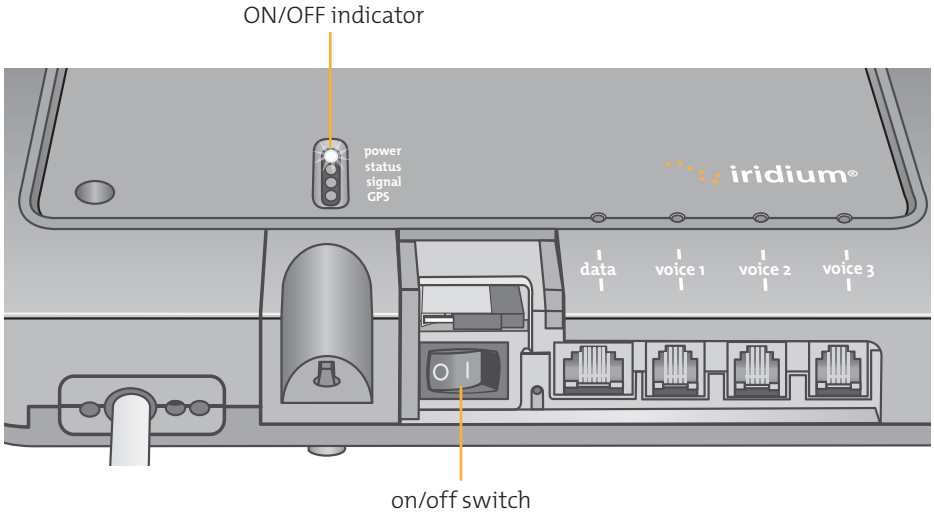
Note: If the SIM card is removed or unlocked any voice or data calls will be terminated immediately. The SIM must be reinserted and locked into position using the locking mechanism on the SIM card holder, then the unit must be switched off and back on again to be reactivated.

Starting the System

1. On the BDE, press the **on/off** switch located under the SIM cover.

   The system authentication will be conducted and the ADE will establish a link with an Iridium satellite. The **on/off indicator** will illuminate green.

Figure 4 | 3



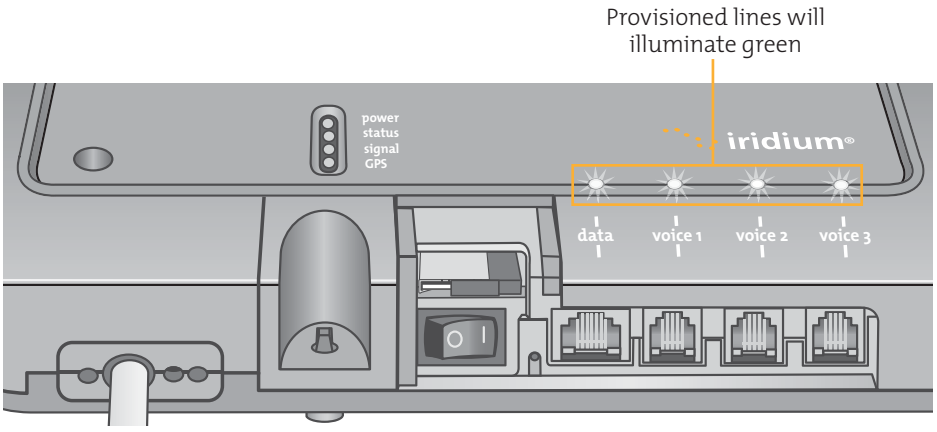
Note: If the ON/OFF indicator is not green see Section 8, Troubleshooting the BDE.

2. Turn on your computers or network.

5 | Voice Calls

The BDE provides three connectors for POTS handsets, which can be used simultaneously. In order to make or receive a phone call you must have a valid SIM installed in the BDE. The BDE will indicate (illuminate green) the lines that have been provisioned.

Figure 5 | 1



Note: If none of the data or voice LEDs are green then it may be that no services have been provisioned. If they are amber, you may be denied access to the Iridium network. See Section 8, Troubleshooting the BDE.

The telephone interfaces are configurable to set the phone tones (ring, dial and busy signal) to a specific country (see Figure 7.9). The default line termination will be set to 600_ resistive and the default PSTN characteristics (tones) are USA.

Voice Call from Handset

A voice line can be configured to one of three line types, A crew line which must use an OpenPort Crew handset, a captain line using the OpenPort Captain Handset or a Normal line.

Follow these steps when calling from a Captain/Normal line:

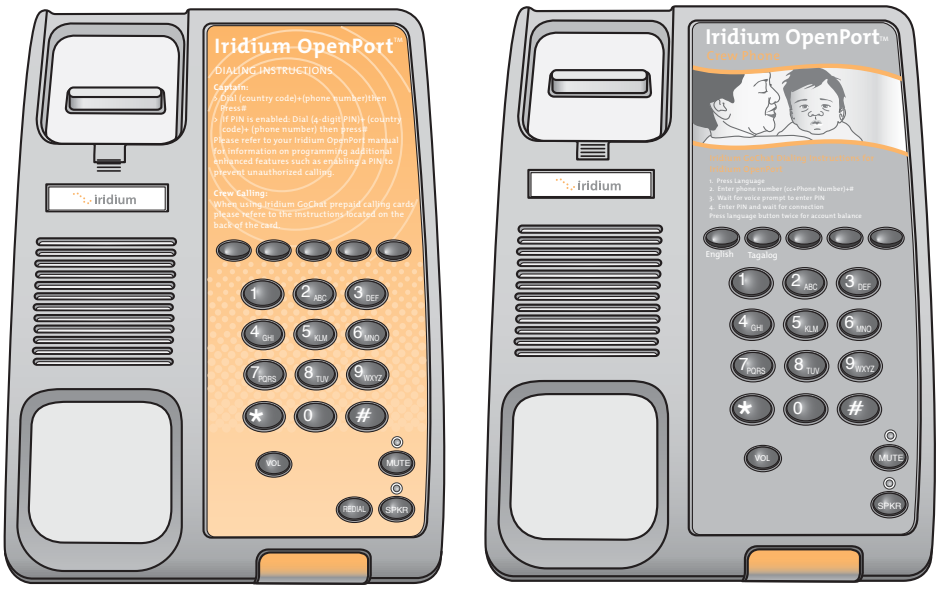
1. Connect the handset to the BDE.
2. Type in the International dialing code followed by the country code, the phone number required, ending with the # key.

   For example:

   country code + **local phone number** + **#**

   pound Key

Figure 5 | 2



Captain Handset

Crew Handset

Voice Call Using Prepaid Card

Iridium OpenPort uses a dedicated phone for crew calling with prepaid scratch cards. Placing a call requires pressing a dedicated speed-dial button, then entering the phone number followed by the #. At the prompt enter your scratch card pin number. Additional instructions are listed on each crew phone.

Supplemental Services

Captain PIN Feature

The PIN feature is only available for a "Captain" line.

- To disable PIN, dial *70*<PIN>#
- To enable PIN, dial *71*<PIN>#
- To change PIN, dial *72*<old PIN>*<new PIN>*<new PIN>#
- To change AND enable PIN, dial *73*<old PIN>*<new PIN>*<new PIN>#

If PIN is enabled, a user making call will need to prepend PIN before other dialed digits; e.g.,

- <PIN><phone number>#

Regardless if PIN is enabled or not, PIN is NEVER required for emergency calls and supplementary service code (including Captain PIN feature) dialing.

Call Barring

Call Barring is supported to block all incoming or all outgoing calls. A 4-digit password is used for all Call Barring operations (activation/ deactivation).

To configure password, dial:

*03*330*<old password>* <new password>* <new password>#

Outgoing call barring

- Activation: dial *33* <password> #
- Deactivation: dial *34* <password> #
- Check Status: dial *33# [A prompt will be played indicating if Outgoing call barring is enabled.]

Incoming call barring

- Activation: dial *35* <password> #
- Deactivation: dial *36* <password> #
- Check Status: dial *35# [A prompt will be played indicating if Incoming call barring is enabled.]

Call Forwarding

Iridium OpenPort supports Call Forward Unconditional, Call Forward Busy, Call Forward No Answer, and Call Forward Not Reachable. The default number for call forwarding is the voicemail number of the phone line.

Call Forward Unconditional

Forward all incoming calls to another number. All calls will be forwarded to the registered number.

- Register: dial *21* <number> # [Specifies the phone number for Call Forward Unconditional.]
- Activation: dial *21#
- Deactivation: dial *22#
- Check Status: dial *23# [A voice prompt will be played indicating if Call Forward Unconditional is enabled and the number that is registered to forward calls.]

Call Forward Busy

Forward incoming calls if the phone line is currently in a call.

- Register: dial *67* <number> # [Specifies the phone number for Call Forward Busy.]
- Activation: dial *67#
- Deactivation: dial *68#
- Check Status: dial *69# [A voice prompt will be played indicating if Call Forward Busy is enabled and the number that is registered to forward calls.]

Call Forward No Answer

Forwards incoming calls if the phone line does not no answer in a specified amount of time.

- Register: dial *61* <number>*<timeout> # [Specifies the number and timeout (in seconds) for Call Forward No Answer. If an incoming call is not answered by the unit in the time specified in the registration, the call is forwarded.]
- Activation: dial *61#
- Deactivation: dial *62#
- Check Status: dial *63# [A voice prompt will be played indicating if Call Forward No Answer is enabled and the number that is registered to forward calls.]

Call Forward Not Reachable

Forwards incoming calls after no response in reaching the Iridium OpenPort unit (e.g., unit is turned off).

- Register: dial *24* <number> # [Specifies the number to forward to if there is no response in reaching the unit.]
- Activation: dial *25#
- Deactivation: dial *26#
- Check Status: dial *27# [A voice prompt will be played indicating if Call Forward Not Reachable is enabled and the number that is registered to forward calls.]

Call Forwarding Precedence

Call Forward Unconditional takes precedence, then Call Forward Busy, then Call Forward Not Reachable, then Call Forward No Answer. When a status check command is sent, only the highest priority active Call Forwarding is reported back.

Cancel all call forwarding – Cancels any and all types of call forwarding, including sending a call to voice mail.

#002# - This command deactivates all call forwarding.

Voice Mail

If you have subscribed to voice mail then you will be notified that a voice mail is waiting for you in three possible ways:

- Interrupted “stuttering” dial tone whenever the user picks up the phone to make an outgoing call. Activation: dial *86#
- Message Waiting LED on the phone (if using the Iridium Captain Handset).
- On ISU Status Page (see Section 7, System Administration)

One voicemail box is provisioned for each subscriber line provisioned as a Captain's line. No voice mail box is provided for a Crew line.

To access your Voice Mail box a user can dial *86#. The user will be able to access the voicemail system to check and retrieve voice mail messages in the language settings of the subscriber line. On an Iridium Captain'd Handset the user can retrieve the voice Mail by pressing the red Voice Mail Notification button at the bottom of the phone.

The Iridium OpenPort Voicemail System can also be reached by dialing 881663790000 from any phone line anywhere. When calling from other than a subscriber line the voicemail system will default to English and prompt for the subscriber line phone number to access the subscriber's voicemail.

6 | Data Transfer

CAUTION

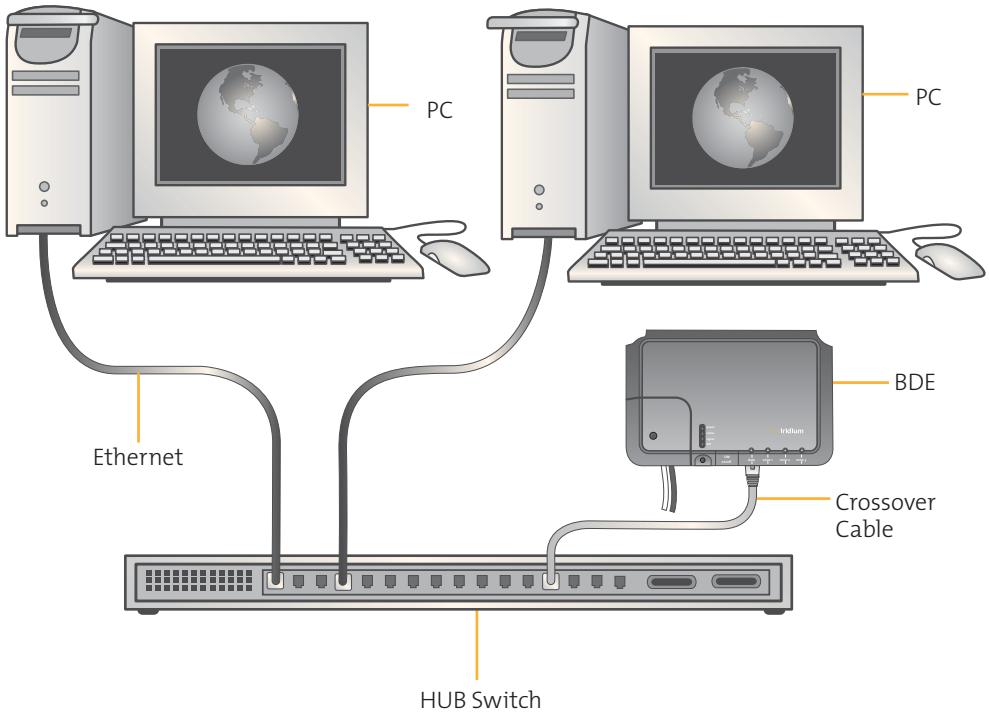
The Iridium Subscriber Unit (ISU) supports "connect on demand" and will make a connection across the Iridium network if a data device tries to access an address outside the local area network. It is the user's responsibility to secure the system from outside access. Ensure proper security (e.g.: firewall, virus protection, encryption) is in place before using the system.

Computer Set-up

The internal structure of the computer network depends on your needs. The ISU is capable of handling everything from the connection of a single PC to a complete Ethernet network. The data port provides an Ethernet connection of 10BaseT using an RJ45 connector connected as MDI-X.

If the Below Decks Equipment (BDE) is to be connected to a down-stream port of an Ethernet hub or switch then the user will need to use a crossover cable. Again, the data port must be provisioned to connect to the Internet. The data LED will be illuminated green.

Figure 6 | 1



PC & Network Configuration

ISU Network Set-up

The internal structure of the computer network depends on your needs. The ISU is capable of handling everything from the connection of a single PC to a complete Ethernet network. The data port provides an Ethernet connection of 10BaseT using an RJ45 connector.

If the Below Deck Equipment (BDE) is to be connected to a down-stream port of an Ethernet hub or switch then the user will need to use a crossover cable. Data Service must be provisioned before you can connect to the Internet. The data LED will be illuminated green if your OpenPort unit is provisioned for data.

For a single PC

- Connect directly to the data port of the BDE
- Use a straight through Ethernet cable
- Configure PC for static configuration (for more details see Windows PC Set-up for Static Configuration)

For multiple PCs

- Connect the switch/hub/router to the data port on the BDE using a crossover cable.
- Connect the PCs to the Ethernet switch, hub or router (Note: these multiple devices will be sharing the same satellite connection over the Iridium network, the more devices connected the smaller the share of the connection.)
- Depending on how your ship-side LAN is configured you may or may not want the ISU to act as a DHCP server and to perform DNS forwarding, see the following section to change this

Configuration of LAN Settings

The OpenPort ISU allows you to configure the following LAN settings, via the web pages when logged on as 'admin'. These settings include:

- IP Address
- Subnet Mask
- DHCP Server and IP Address Range to Use
- DNS Forwarding

IP Address

This is the IP address of the ISU as seen from the vessel. The factory default is 192.168.0.1. You should not change this default unless there is already LAN equipment on the vessel, in which case you must set this to an unused IP address of the ship-side LAN.

Subnet Mask

This defines the subnet used on the vessel. The factory default is 255.255.255.0. You should only change this default if you change the IP address of the ISU. All network devices must use the same subnet in order to communicate with one another.

Dynamic Host Configuration Protocol (DHCP) server

This automatically provides unique IP addresses and appropriate configuration parameters to each network device connected to the ISU. In the current configuration, DHCP is disabled.

Note: While DHCP is disabled, devices connected to the ISU will need to have their network settings manually configured. There must only be one DHCP server on any network segment. Please see insert on "how to configure network connections manually with windows."

DHCP IP Address minimum and maximum

This sets the range of IP addresses for the DHCP server to use. The factory default is 192.168.0.2 to 192.168.0.254. The range specifies the maximum number of devices on the network. Both the maximum and minimum value must be in the same subnet.

Domain Name System (DNS) forwarding

DNS is used to convert network names (such as www.google.com) into the IP addresses needed to connect to the device. The factory default is disabled. The ISU acts as a switching station so that it automatically forwards DNS requests to the appropriate DNS server.

Once you change the LAN configuration and press the 'Update IP Configuration' button the ISU will reboot to apply the configuration changes - this will drop any calls. Once the ISU has rebooted any connected network devices may take up to 10 minutes to automatically obtain new settings. During this switch over time the network devices may not be able to communicate with the ISU or/and duplicate IP address settings can occur.

If you change the LAN settings it is advisable to reboot any attached devices to avoid this issue

Note: The LAN Settings can be reset to the factory defaults using the reset switch on the BDE.

Exactly how you configure the network clients on the vessel will vary depending on the operating system. Refer to your operating system manual or technical support organization to obtain the exact details to achieve this. You should normally use the ISU DHCP server to automatically configure the correct client settings. If you use this option the clients must be setup to obtain their settings automatically. This is the easiest way to setup a network.

If you use a static configuration you must ensure that the ISU is the default gateway, that the ISU is on the same subnet as all devices and each network address is unique.

Windows PC Set-up for Static Configuration

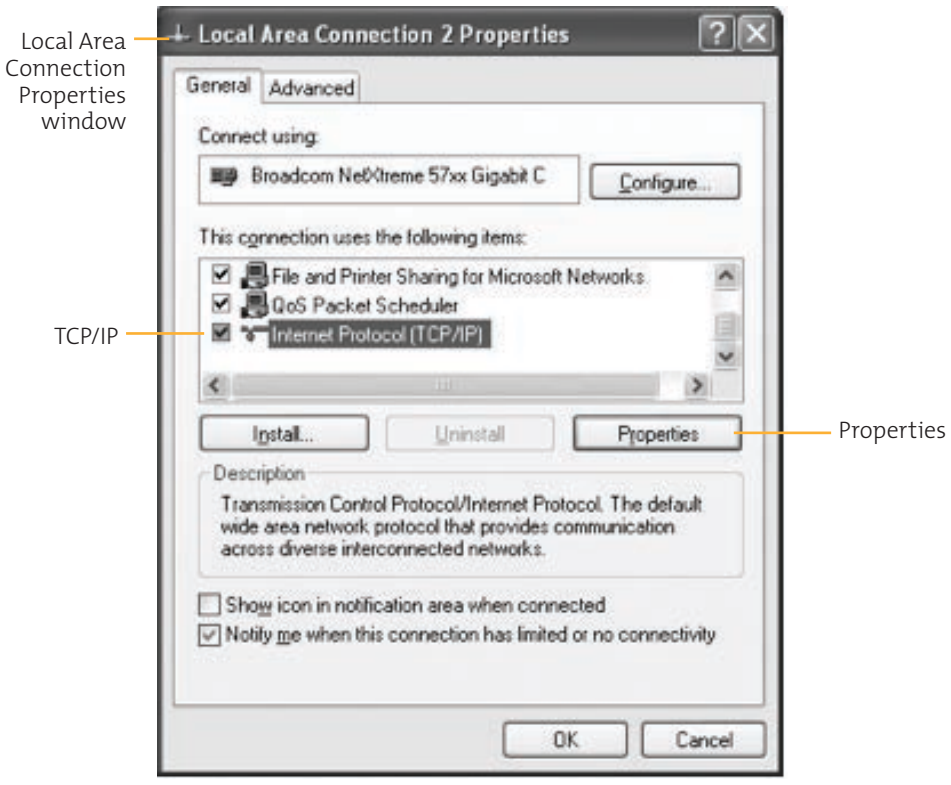
Depending on the needs of your computer network, it may be necessary to statically assign an IP address to the computer directly connected to the Iridium OpenPort unit. The following steps cover a Windows XP configuration however they can generally be applied to all Windows setups. For additional assistance in configuring your desktop computer for a static connection please contact your local computer administrator.

1. Open Network Connections located in the Control Panel.

2. Locate the icon for the Local Area Connection connected to the OpenPort unit and right-click Properties.

3. From the list of connections used, highlight Internet Protocol (TCP/IP) and click Properties

Figure 6 | 2



4. On the Internet Protocol (TCP/IP) Properties page, click the radio button Use the following IP address: and enter an IP address to be used by this computer.

Note: This IP address should be different from the OpenPort unit while still being in the same IP range. For example, if the OpenPort unit is configured as 192.168.0.1 (default), then a computer connected to the ISU must be configured within the IP range 192.168.0.x where x is anything between 2 and 254.

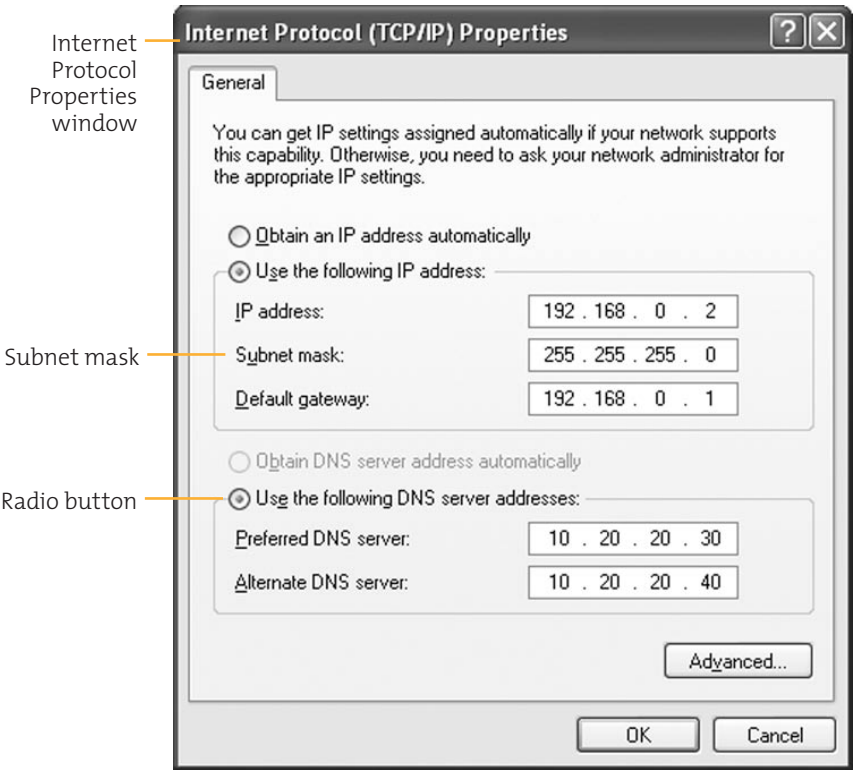
5. Next, set the Subnet mask: to 255.255.255.0

6. Enter the IP address of the OpenPort unit for the field marked Default gateway.

7. Lastly, check the radio button for Use the following DNS server addresses: and enter the DNS server address provided by your Service Provider for the Preferred DNS server address. If an address is not provided use the OpenPort unit's IP address as shown below.

8. Click OK to close any open properties pages.

Figure 6 | 3


Internet Protocol Properties window
Subnet mask
Radio button
Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 0 . 2
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 0 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 10 . 20 . 20 . 30
Alternate DNS server: 10 . 20 . 20 . 40
Advanced...
OK
Cancel

Accessing the Web

As long as your data port is provisioned and the proper physical connections made, access the Internet simply by starting your web browser. The ISU allows you complete functionality to upload and download data, web pages, and email. Note: Large files or graphic intense web pages will take longer to transfer or display.

7 | System Administration

ISU Web Pages

Diagnostics

There are two levels of diagnostic information available, basic and administrator. The user can access any web page with the "Basic" heading. Configuring the system and full diagnostics can only be done by the System Administrator and requires a login password. The following Basic diagnostics and configuration capability is available to the user.

To access the ISU Web Pages:

1. Connect a PC to the data port on the BDE
2. Open the web browser and in the web browser address window, type: http://192.168.0.1.

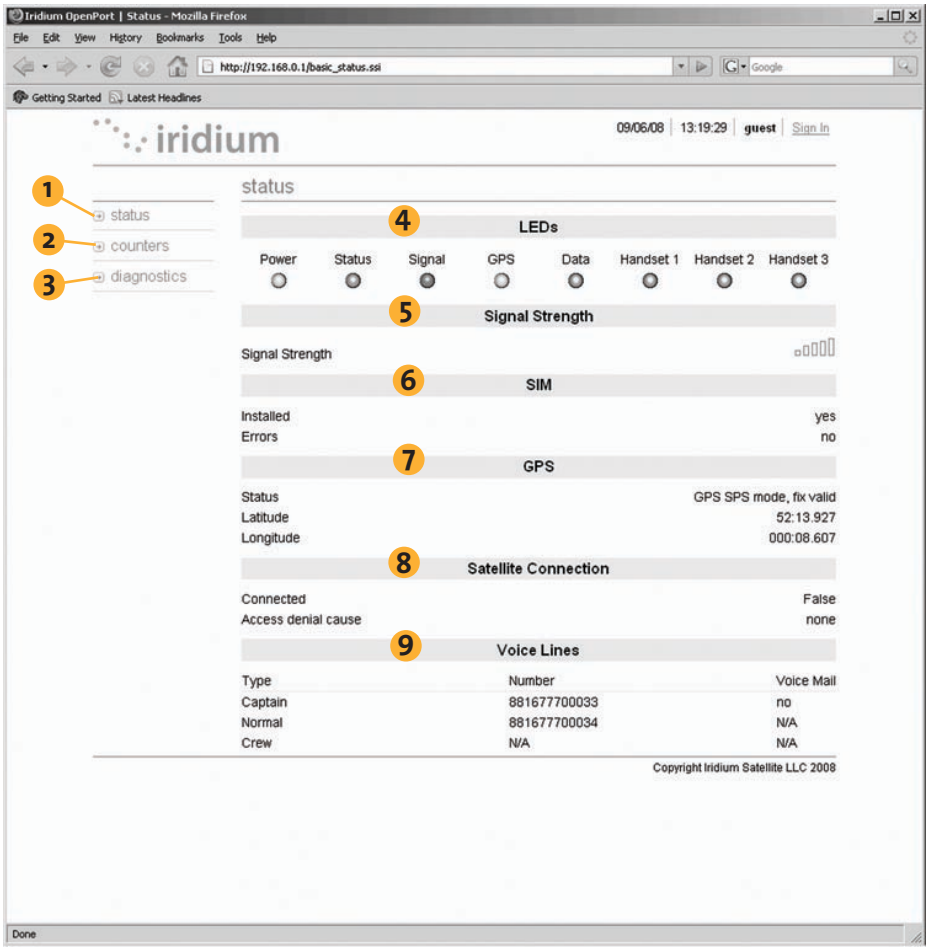
Note: The default IP address is assigned to the ISU at the factory. The IP address can be changed if there are multiple ISU's at a single site. If this has been done then type in the new IP address. To reset the IP address back to the default (192.168.0.1), press the network reset button on the BDE.

3. Select the appropriate link:
   - Basic Status
   - Basic Counters
   - Basic Diagnostics

Note: The information displayed on the web pages is not dynamically updated. To update the information, refresh the web page from your browser.

Basic Status

Figure 7 | 1



Select to link to:

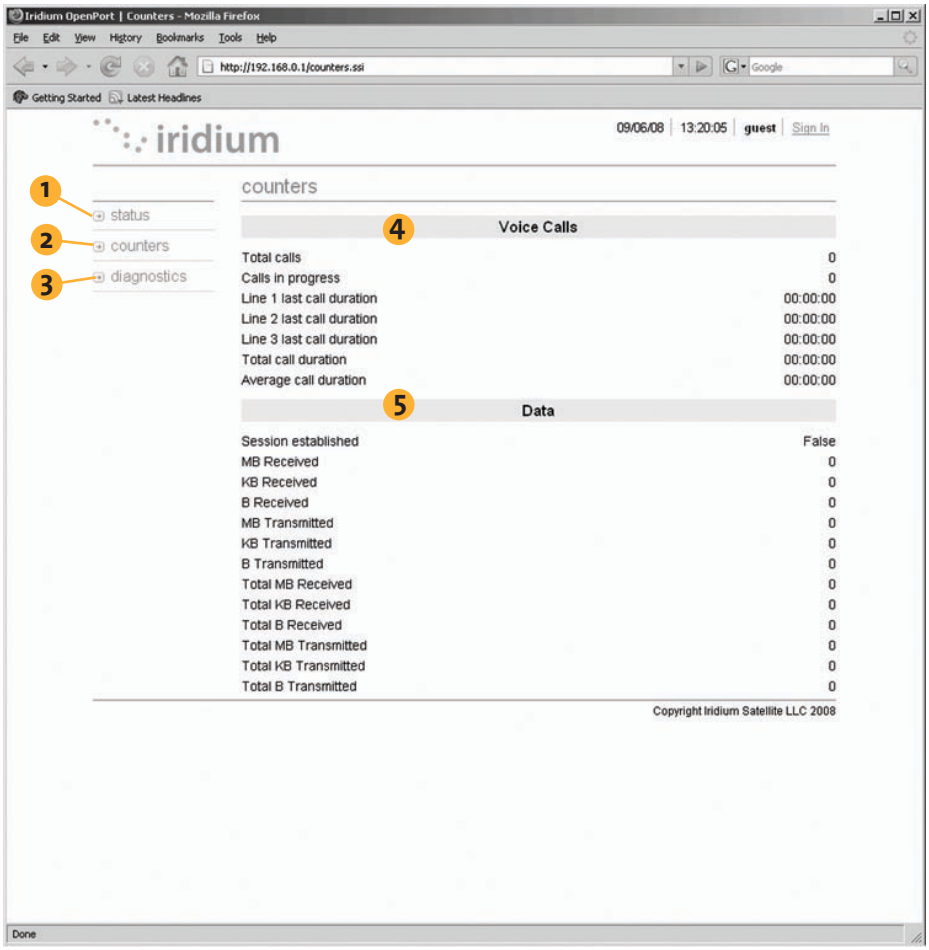
1. Status
2. Counters
3. Diagnostics

Indicators:

4. LEDs
5. Signal Strength
6. SIM
7. GPS (status, location)
8. Satellite Connection
9. Voice Lines

Basic Counters

Figure 7 | 2



Select to link to:

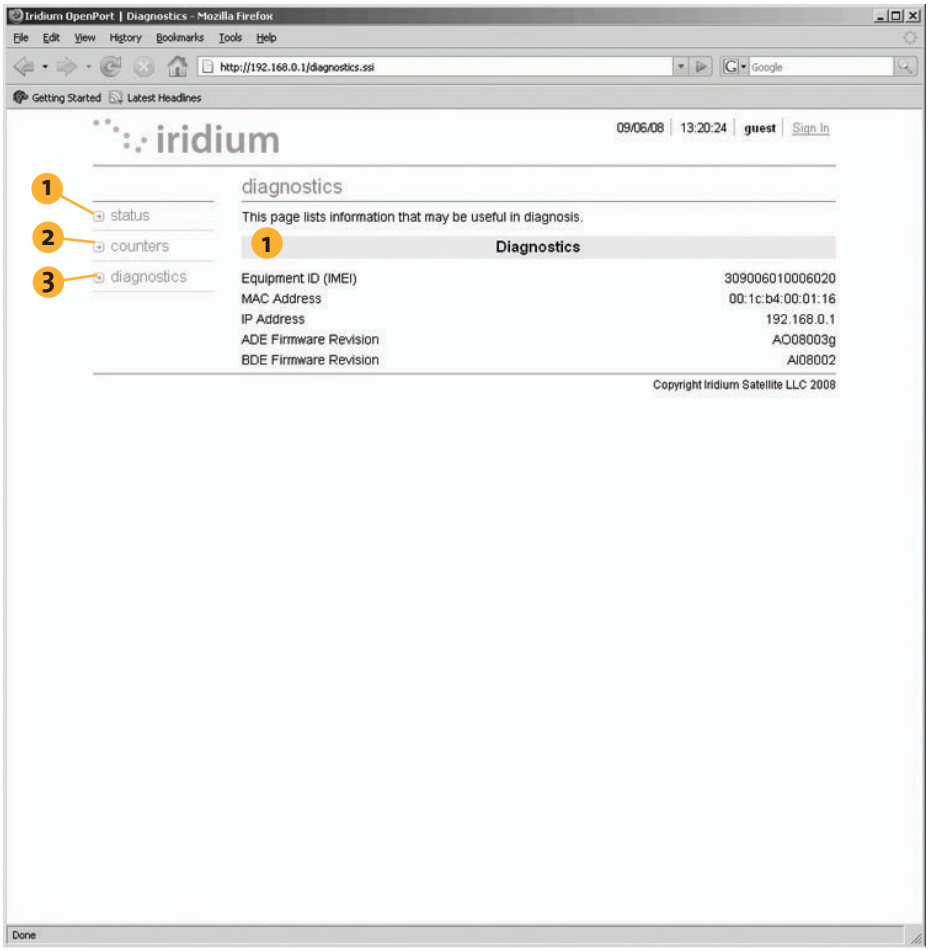
1. Status
2. Counters
3. Diagnostics

This page provides:

4. Voice Call information
5. Data Use information

Basic Diagnostics

Figure 7 | 3



Select to link to:

1. Status
2. Counters
3. Diagnostics

This page provides:

1. Useful diagnostic information such as:
   - Equipment ID
   - MAC & IP address
   - Hardware & Firmware revision level

Configuring the System

Configuring the system and full diagnostics can only be done by the System Administrator and requires a login password.

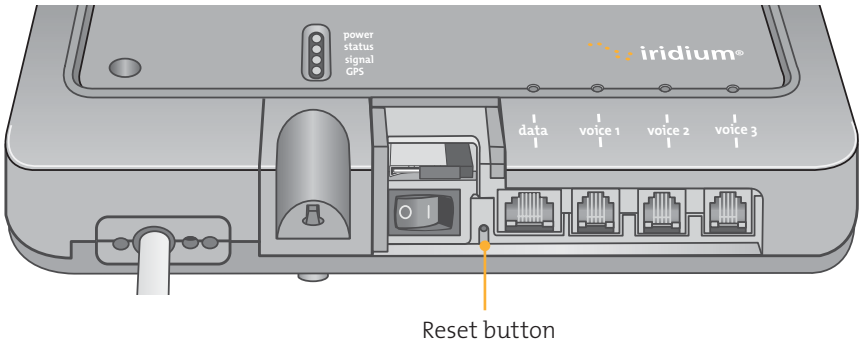
To access the ISU Web Pages:

1. Connect a PC to the data port on the BDE

2. Open the web browser and in the web browser address window, type: http://192.168.0.1.

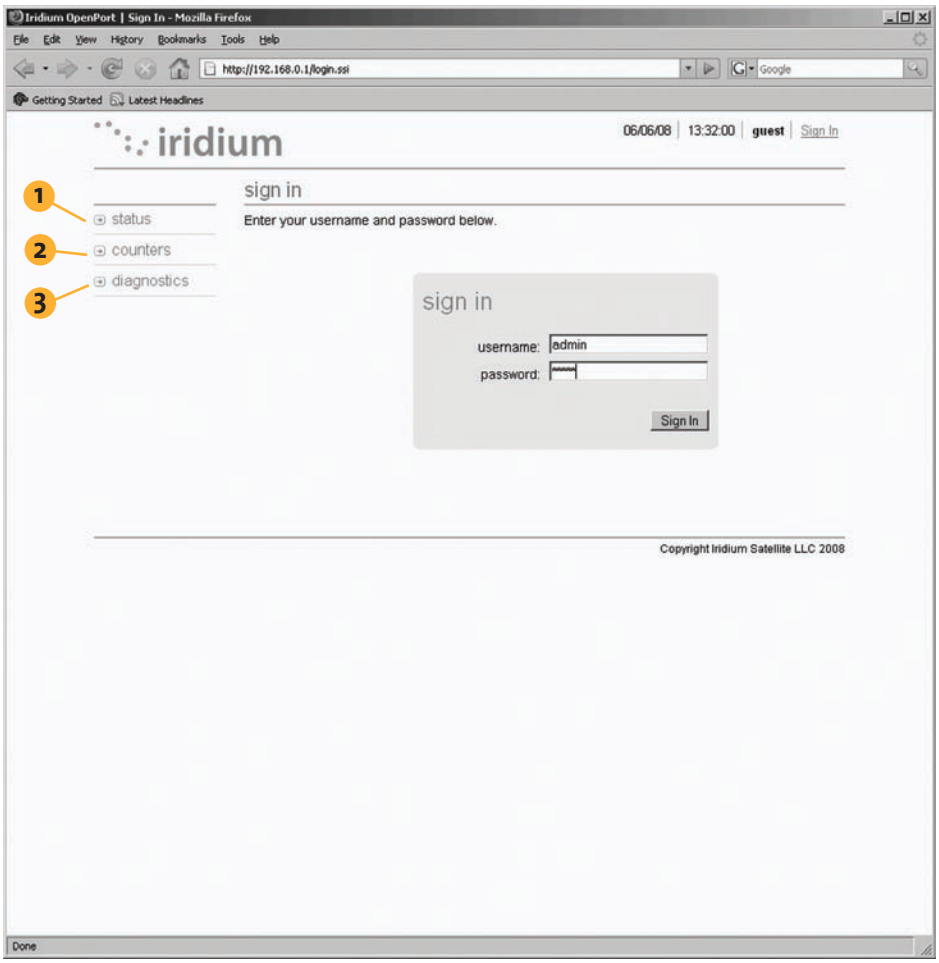
Note: The default IP address is assigned to the ISU at the factory. The IP address can be changed if there are multiple ISU's at a single site. If this has been done then type in the new IP address. To reset the IP address back to the default (192.168.0.1), press the network reset button on the BDE.

Figure 7 | 4



3. Select "Login" for administrator level diagnostics. Type in the user name and password specified by Iridium. Call your Service Provider if login fails.

Figure 7 | 5



4. Select the appropriate link:

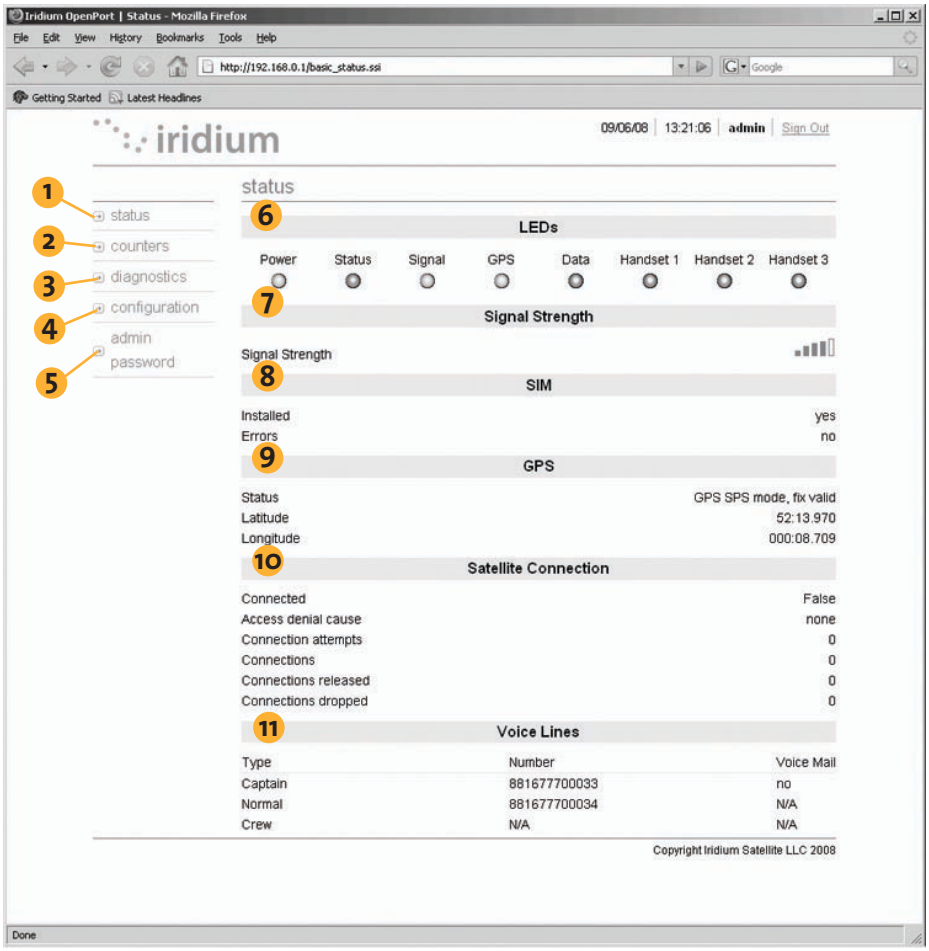
Note: The information displayed on the web pages is not dynamically updated. To update the information, refresh the web page from you browser.

Select to link to:

1. Status
2. Counters
3. Diagnostics

Status

Figure 7 | 6



Select to link to:

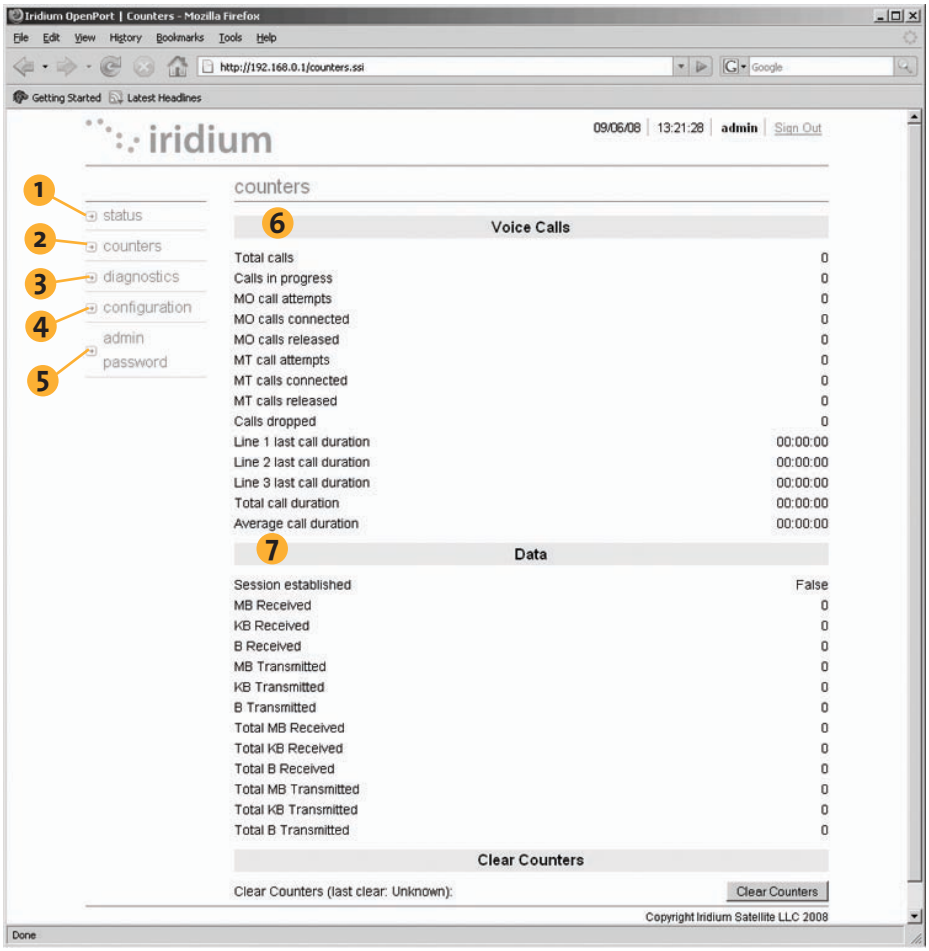
1. Status
2. Counters
3. Diagnostics
4. Configuration
5. Admin Password

Indicators:

6. LEDs
7. Signal Strength
8. SIM
9. GPS (status, location)
10. Satellite Connection
11. Voice Lines

Counters

Figure 7 | 7



Select to link to:

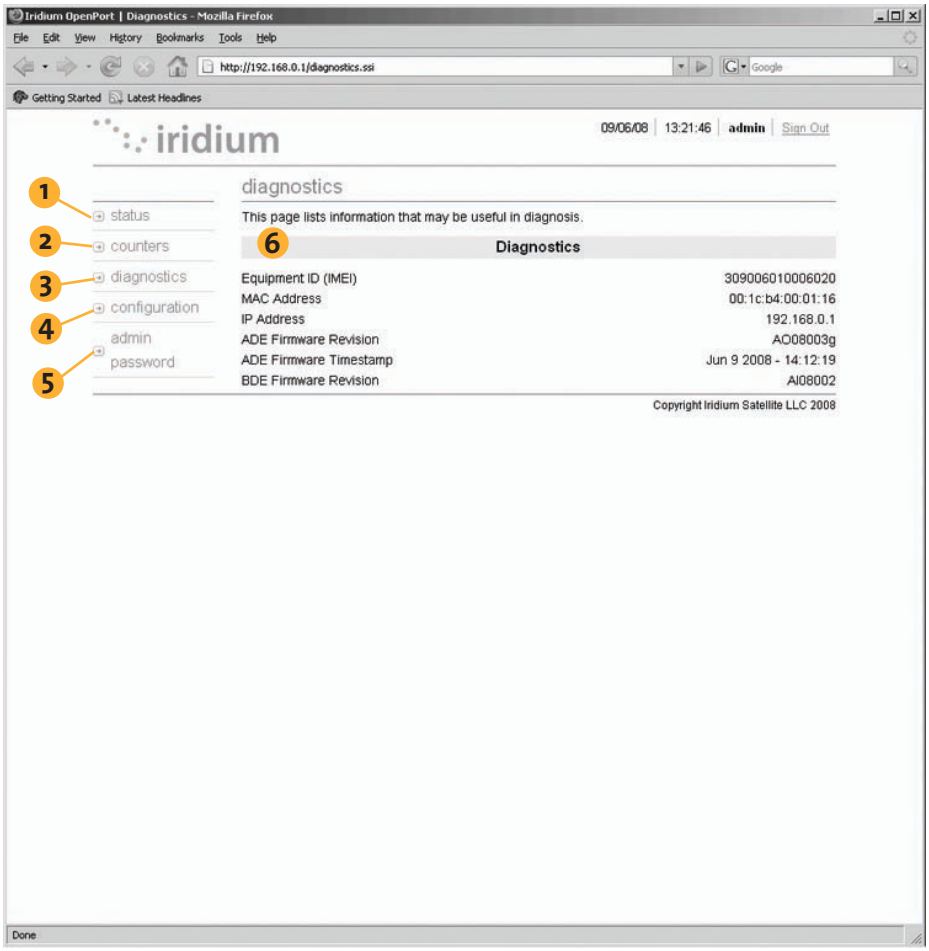
1. Status
2. Counters
3. Diagnostics
4. Configuration
5. Admin Password

This page provides:

6. Voice Call information
7. Data Use information

Diagnostics

Figure 7 | 8



Select to link to:

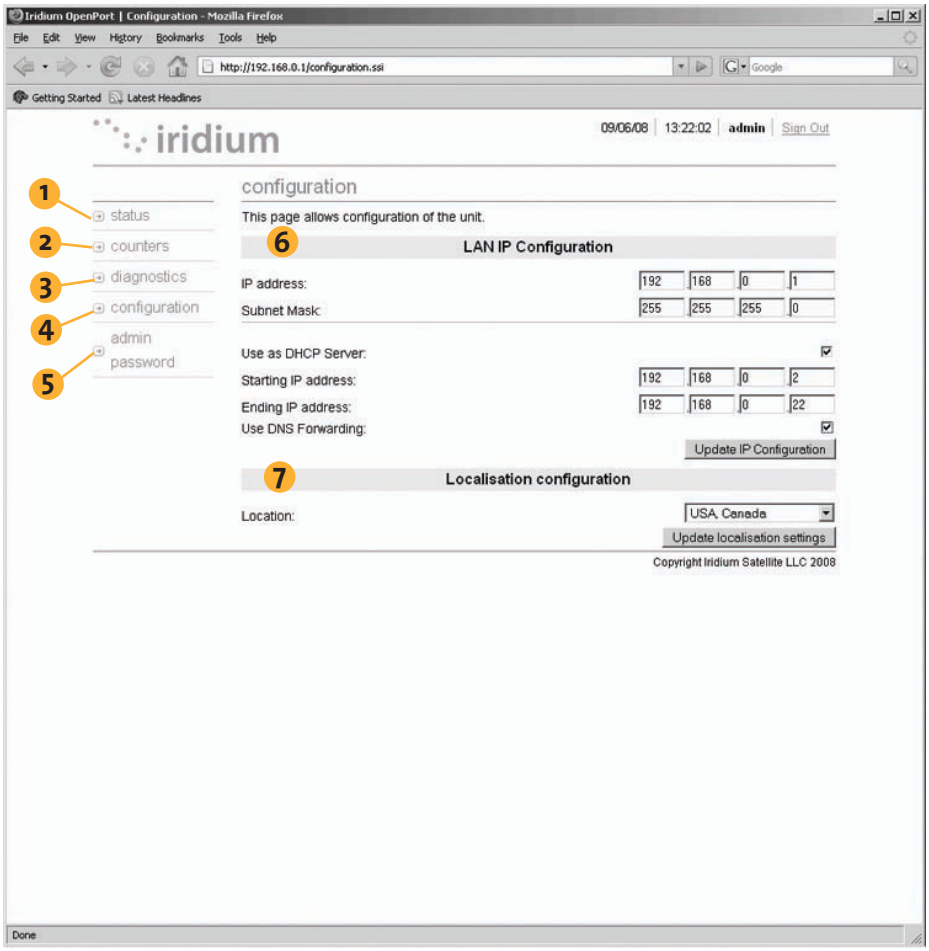
1. Status
2. Counters
3. Diagnostics
4. Configuration
5. Admin Password

This page provides:

6. Useful diagnostic information such as:
   - Equipment ID
   - MAC & IP address
   - Hardware & Firmware revision level

Configuration

Figure 7 | 9



Select to link to:

1. Status
2. Counters
3. Diagnostics
4. Configuration
5. Admin Password

This page provides:

6. LAN IP configuration
7. Localisation configuration

Admin Password Change

Figure 7 | 10

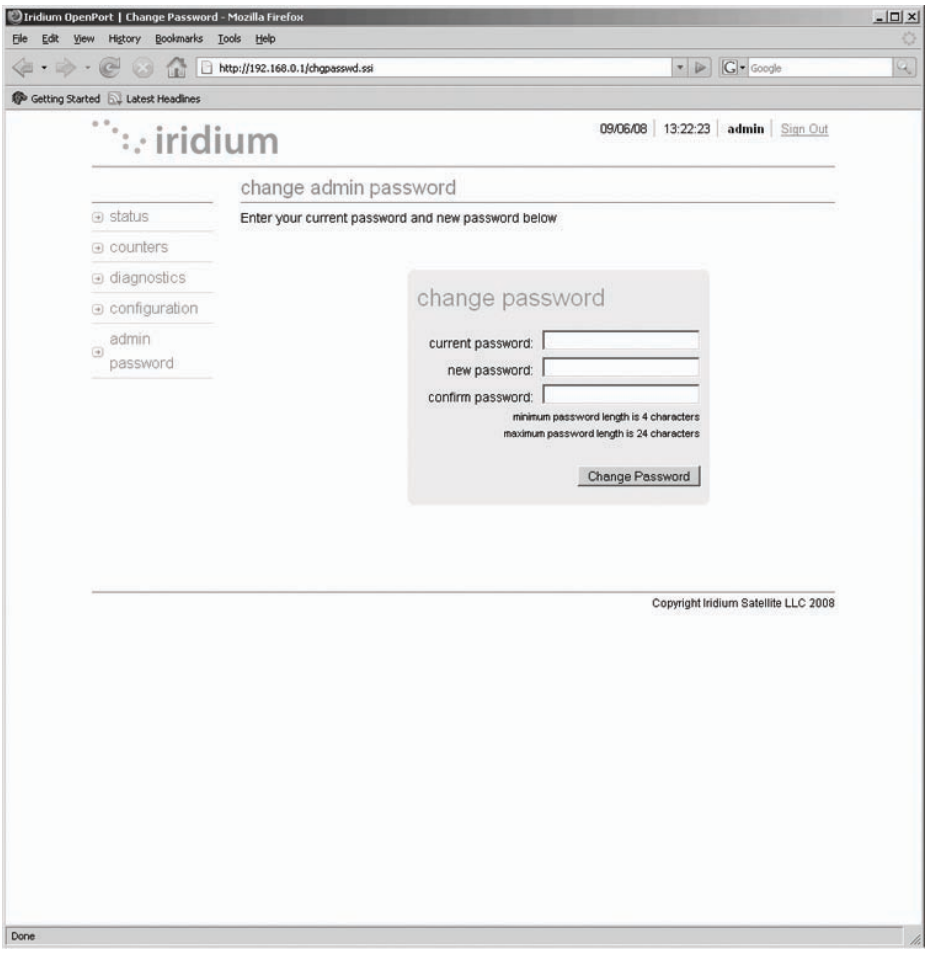
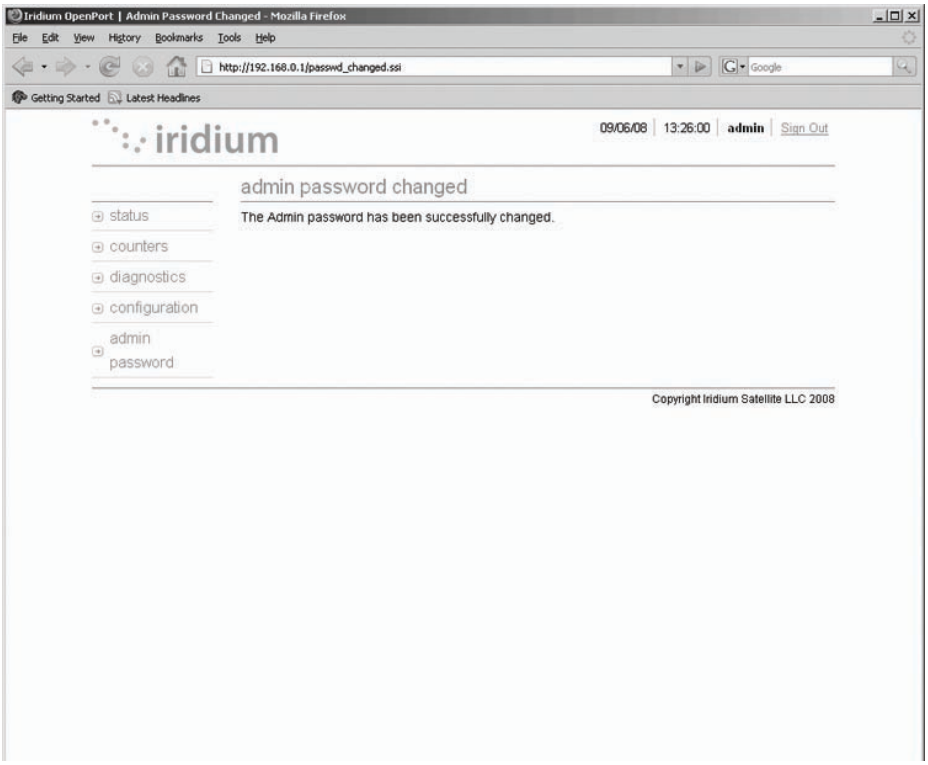


Figure 7 | 11



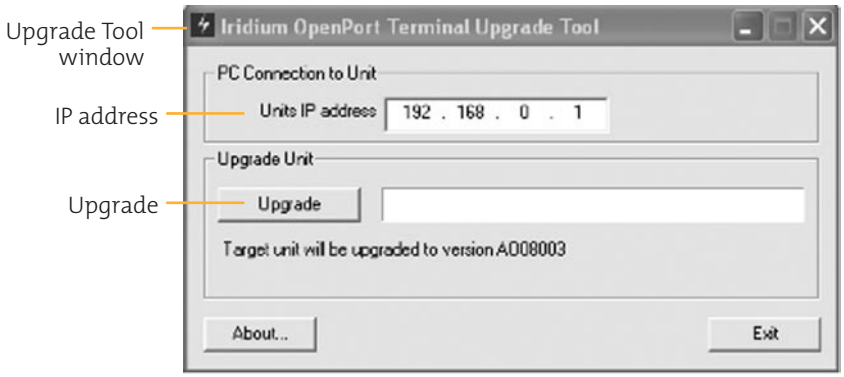
Software Upgrade

To upgrade the software you need:

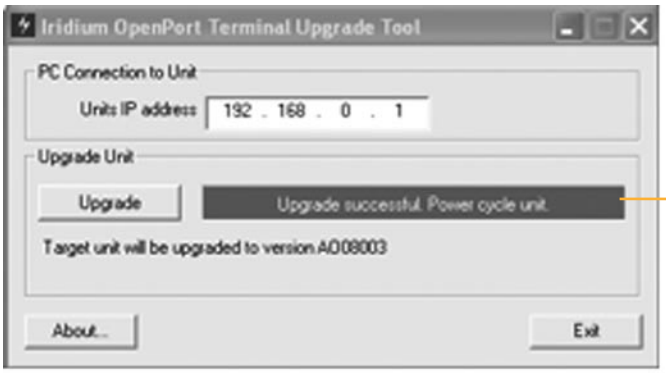
- A windows-based PC
- Standard Ethernet cable
- OpenPort Terminal Upgrade Tool executable software

Follow these steps to upgrade the software:

1. Connect PC to OpenPort data port with a standard Ethernet cable.
2. Open a browser and verify connectivity with the OpenPort terminal by navigating to 192.168.0.1, which is the default IP address assigned to all OpenPort terminals at the factory. If the default has been changed, enter the new IP address of the terminal.
3. If you see the OpenPort status web page, proceed to step 4. Otherwise, you may need to configure TCP/IP properties in your computer – please refer to Section 6 for detailed instructions on computer setup.
4. Double click the OpenPort Upgrade tool executable. The following window will appear. Enter the IP address of the OpenPort terminal.



5. Click the "Upgrade" button to start the upgrade process. The progress bar will move from 0 to 100 as the upgrade takes place. Once the upgrade process is complete, the message "Upgrade successful. Power cycle unit" will appear.



6. Turn the unit off for 10 seconds and then turn it on again. You must leave power on for 1 minute after the power cycle to prevent reversion to the old software version.

7. To verify that the new software version was installed, connect to the OpenPort Admin web page (see step 2), and click "diagnostics". The software version is displayed on this page.

8 | Troubleshooting

There are two main sources of information for troubleshooting:

1. The ISU Web Pages (as detailed in Section 7)
2. The LEDs on the BDE

LED	Off	Green	Green Flashing	Amber	Red	Red Flashing
power	No power supplied to BDE	Power supplied to BDE and BDE switched on. Power is being passed to ADE.	Not Used	Power supplied to BDE, BDE switched off	Not Used	Not Used
status	Idle: connected to the Iridium network but no traffic	Active: Voice or data is being transferred to/ from the Iridium network	Not Used	Standby: not connected to the Iridium network.	Not Used	BDE cannot communicate with ADE – check connections.
signal	Not Used	Strong network signal detected	Not Used	Weak network signal detected	No network signal detected.	Not Used
gps	Not Used	GPS signal available to ADE	Not Used	Not Used	No GPS signal	Not Used
data	Data port not provisioned.	Data port provisioned for use.	Flashing when data call in progress	Access to network denied - see Web Page for details.	Not Used	Not Used
voice 1	Voice port 1 not provisioned. *	Voice port 1 provisioned for use.	Incoming call (ringing) or call in progress.	Access to network denied - see Web Page for details.	Not Used	Not Used
voice 2	Voice port 2 not provisioned. *	Voice port 2 provisioned for use.	Incoming call (ringing) or call in progress.	Access to network denied - see Web Page for details.	Not Used	Not Used
voice 3	Voice port 3 not provisioned. *	Voice port 3 provisioned for use.	Incoming call (ringing) or call in progress.	Access to network denied - see Web Page for details.	Not Used	Not Used

* The BDE does not know what services are provisioned until it has connected to the network so this LED will be off at initial power up.

Suggested actions for the following fault conditions:

LED	Color	Reason	Suggested Action
power	Off	No power supplied to BDE	Get a qualified person to check the power being supplied to the BDE, it should be between 11 – 32VDC at the input to the BDE and capable of providing up to 50W.
power	Amber	Power supplied to BDE, BDE switched off	Remove the SIM cover and ensure that the on/off switch is in the on positions. With this switch in the on position the LED should be green. If the switch is on and this LED remains amber then call your service provider for assistance.
status	Red Flashing	BDE cannot communicate with ADE – check connections.	Get a qualified person to check the connection between the BDE and ADE, this should include the connections at the BDE and ADE and the entire cable between them.
signal	Red	No network signal detected.	It is valid for this LED to go read for short periods of time but it should not remain red. If it remains red it implies that there is a problem with the equipment. Please call your service provider and report all the information you can see on the web pages as well as the LED colours.
gps	Red	No GPS signal	You may be in an area where a gps signal cannot be received, if the vessel moves and the problem persists then contact your service provider and report that internal GPS has failed.
data	Amber	Access to network denied - see Web Page for details.	Access to the Iridium network has been denied, there are a number of reasons for this below for details.
voice	Amber	Access to network denied - see Web Page for details.	Access to the Iridium network has been denied, there are a number of reasons for this below for details.

Access Denied

Denial of access will be indicated by the voice and data LEDs on the BDE illuminating Amber. Access to the Iridium network may be denied for a number of reasons. The following items contain information that you may be asked to provide when contacting your service provider.

Reason	Suggested Action
TMSI invalid	Unit will automatically try to access the network using the IMSI.
IMSI invalid	Call service provider.
Authentication Failure	Check SIM status on Status web page, check using a valid SIM card. If all ok call service provider.
IMEI Blacklisted	Call service provider
Indeterminable Location	Check GPS LED on BDE. If LED is green, check GPS status on web page. Contact Service Provider with this information and denial information.
Restricted Area	Wait until move into different geographical area

Appendix A | Approvals

FCC Declaration of Conformity

On behalf of Iridium Satellite LLC, I declare under penalty of perjury that the following device complies with the requirements of the United States Federal Communications Commission pertaining to a personal computer peripheral device:

Identification: Iridium Broadband Terminal, BBDE0801 Below Decks Equipment

Compliance Statement: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible Party: Iridium Satellite LLC
6707 Democracy Blvd.
Suite 300
Bethesda, MD 20817
U.S.A.
Telephone: 1.301.571.6200

Date: _____

_____
Donna Betha Murphy
VP Regulatory Engineering
Iridium Satellite LLC

Your comments and suggestions are welcome and greatly appreciated. They help us develop superior products for demanding professionals like you. For additional information about Iridium products and services, please contact Iridium as follows:

By Telephone: Customer Service

Toll Free Number from USA: +1-866-947-4348

Local or International Number: +1-480-752-5155

By E-mail: info@iridium.com

By Mail: Iridium Satellite LLC

Attn.: Customer Service

8440 South River Parkway

Tempe, AZ 85284 USA

8. Beta Trial Support

Please send your questions and comments to ***OpenPort@iridium.com***

iridium

Iridium

Iridium Satellite LLC

USA